

REMARKS

Reconsideration and allowance are respectfully requested in light of the above amendments and the following remarks.

Independent claims 1, 15, 26, 40, and 44 have been amended to better define the claimed invention. Support for the subject matter added to the independent claims may be found in original claim 26, in Fig. 13, and in the specification on page 7, lines 28-39, page 9, lines 27-29, and page 14, lines 11-12.

New claims 45-51 have added. Of the new claims, claims 45-51 recite features of claims 2-7 and 12, but depend from base claim 44. Claims 8-11, 13, 14, 16-25, 27-37, and 39 are withdrawn.

Claims 1, 2, 4-7, 12, 15, 26, and 38 were rejected under 35 USC §103(a) as being unpatentable over Monroe (US 1,995,620) in view of Shtarkman (US 4,504,044). Claim 3 was rejected under 35 USC §103(a) as being unpatentable over Monroe and Shtarkman in view of Fukahori et al. (US 4,899,323). Claims 40-44 were rejected under 35 USC §103(a) as being unpatentable over Mouille et al. (US 4,458,862) in view of Monroe. Applicants respectfully traverse.

Claim 1 recites:

A damping structure comprising:

a member which is rigid and which defines an internal cavity;

an aggregate which comprises at least solid bodies in contact and which completely fills said internal cavity;

a rigid plate for closing off with sealing said internal cavity; and

an elastic means which exerts elastic pressure on said rigid plate so as to constrain said aggregate.

Applicants respectfully submit that Monroe and Shtarkman fail to disclose or suggest the features recited in claim 1 of:

(1) a damping structure member which is rigid and which defines an internal cavity, (2) an aggregate which comprises at least solid bodies in contact and which completely fills the internal cavity, and (3) a rigid plate for closing off with sealing the internal cavity.

Claim 1 recites an aggregate of solid bodies that completely fills an internal cavity of a damping structure. The Final Rejection acknowledges that Monroe does not disclose this feature (Final Rejection page 2, lines 3-5 of the third paragraph). Shtarkman's Fig. 1 is cited in the Final Rejection for providing the teaching of a damper having an internal cavity 66 completely filled with solid bodies (Final Rejection page 2, lines 5-7 of the third paragraph).

However, Applicants submit that Shtarkman's Fig. 1 does not show a chamber 66 completely filled with particles 68. As

illustrated, particles 68 are distributed throughout chamber 66 with spaces.

Moreover, if chamber 66 were in fact filled with the particles 68, housing 16 could not be compressed from the position illustrated by Fig. 1 to that illustrated by Fig. 2. Monroe specifically states that particles 68 are incompressible in volume and that they act as a system of individual particles (col. 4, lines 54-61, and line 68, through col. 5, line 2). This necessarily means that the particles are not in contact and are not constrained, otherwise the device could not provide a damping capability. Stated another way, the particles do not completely fill the chamber. Therefore, the combined teachings of Monroe and Shtarkman do not disclose the claimed feature of an aggregate which comprises at least solid bodies in contact and which completely fills the internal cavity.

Claim 1 also recites a rigid member of a damping structure that defines an internal cavity. Shtarkman, on the other hand, discloses that chamber 66 is partially defined by two elastomeric shear springs 18, two elastomeric shear springs 20, and two elastomeric springs 46 (col. 4, lines 14-53). Although these elastomeric components cooperate with rigid outer housing members 12, 14 and inner housing members 16 to define the internal cavity

of chamber 66, it cannot be said that the combined structure defining the internal cavity of chamber 66 is rigid.

Additionally, it cannot be said that rigid outer housing members 12, 14 alone define the internal cavity. Therefore, it follows that Shtarkman does not disclose or suggest the claimed feature of a rigid member of a damping structure that defines an internal cavity.

Moreover, Applicants submit that it is not obvious to combine the teachings of Monroe with those of Shtarkman with regard to the rigid member defining an internal cavity. Monroe discloses a vibration inhibitor with an inertia member. Shtarkman, on the other hand, discloses a dry viscous damper. Shtarkman's viscous damper is completely different from Monroe's vibration inhibitor. For example, Shtarkman's viscous damper includes multiple housing members, pressurizable gas chambers, elastomeric diaphragms, and elastomeric shear springs (col. 4, lines 14-39). Therefore, the vibration inhibitor and the viscous damper act differently.

Claim 1 further recites a rigid plate that closes off and seals the internal cavity. Monroe discloses an annular clearance space 26 between the casing and the inertia member (page 2, column 1, lines 40 to 48). This clearance space allows

the air to be forced from one side of the inertia member to the other side to provide the damping action of the inertia member (page 2, column 2, lines 5 to 15). Thus, the teaching of Monroe is different from the claimed feature and the actions of the rigid plate and of the inertia member are also different.

In accordance with the above discussion, Applicants submit that the combined teachings of Monroe and Shtarkman do not disclose or suggest the features recited in claim 1. More specifically, Monroe and Shtarkman do not disclose or suggest the features of: (1) a damping structure member which is rigid and which defines an internal cavity, (2) an aggregate which comprises at least solid bodies in contact and which completely fills the internal cavity, and (3) a rigid plate for closing off with sealing the internal cavity. Therefore, allowance of claim 1 and all claims dependent therefrom is warranted.

Independent claims 15 and 26 recite similar features to those distinguishing claim 1 from the combined teachings of Monroe and Shtarkman. Claims 15 and 26 patentably distinguish over the combination of Monroe and Shtarkman for similar reasons to those given above with respect to claim 1. Therefore, allowance of claims 15 and 26 and all claims dependent therefrom is warranted.

Claim 41-43 were rejected as being obvious over the combined teachings of Mouille and Monroe. Of these, claims 42 and 43 depend from claim 1, which was solely rejected as being obvious over the combination of Monroe and Shtarkman. Since claim 1 is patentable over the teachings of Monroe and Shtarkman for the reasons given above, claims 42 and 43 dependent therefrom are also allowable.

Claim 41 depends from claim 40 and recites all of the features of claim 1. The Office Action does not propose that Mouille teaches the features of claim 1 that are acknowledged to be absent in Monroe's disclosure. Therefore, allowance of claim 41 is warranted for similar reasons warranting the allowance of claim 1.

Independent claims 40 and 44 were rejected as being obvious over the combined teachings of Mouille and Monroe. The Final rejection acknowledges that Mouille does not disclose a damper having an aggregate (Final Rejection page 4, line 5). Continuing, the Final Rejection proposes that Monroe teaches the damper having an aggregate (Final Rejection page 4, lines 5-6).

However, claims 40 and 44 recite an aggregate of solid bodies that completely fills an internal cavity of a damping structure. Additionally, the Final Rejection acknowledges that

Monroe does not disclose this feature (Final Rejection page 2, lines 3-5 of the penultimate paragraph). Therefore, the combined teachings of Mouille and Monroe are acknowledged not to teach or suggest all of the features recited in claims 40 and 44 and allowance of these claims is thereby warranted.

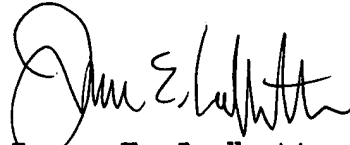
Moreover, the Final Rejection proposes modifying Mouille's structure with Monroe's damper by attaching Monroe's damper to a lever arm taught by Mouille, so as to more effectively damp the vibrations of a gearbox (Final Rejection page 4, lines 6-9). However, claim 44 now recites that at least one suspension bar includes an internal cavity with an aggregate, a rigid plate and elastic means. As now claimed, the damping member is not a separate member that is attached to the suspension bar. Therefore, the modification of Mouille's structure with Monroe's damper no longer corresponds to the claimed structure and allowance of claim 44 is warranted for this further reason.

In view of the above, it is submitted that this application is in condition for allowance, and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone

the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "James E. Ledbetter". The signature is fluid and cursive, with a large initial "J" and "L".

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Date: October 28, 2003
JEL/DWW/att

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